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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,800	07/10/2003	Shinji Kobayashi	240043US2	1909

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EXAMINER	
EDWARDS, LAURA ESTELLE	
ART UNIT	PAPER NUMBER
1734	

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/615,800	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Laura Edwards	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 15-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6-8 and 19* is/are allowed.

6)☒ Claim(s) *1-5, 9, 10, 15-18, and 20-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

Claims 2-5, 10, 15-18, and 20-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, lines 5-6, it is unclear how the "wherein" clause further limits the originally presented claim. Applicants recite "wherein a second exhaust flow rate is larger than a first exhaust flow rate" and it is unclear why such repetitive language is necessary when the claim already recites such a limitation in lines 3-4.

In claim 3, Applicants recite a "timing,... including setting, and carrying out switching at this timing". It is unclear how this timing constitutes a structural limitation. This claim language is deemed awkward and suggests that this claim merely recites another process limitation. It is suggested that Applicants refer to a --timer-- as such language clearly defines structure to which a time is kept. In addition, it is suggested that the "based on experiments performed in advance for" language be removed because such language is unnecessary and promotes uncertainty as to how the timer is set.

In 10, line 3, Applicants refer to "a control portion" and it is unclear whether this control portion is the same as the control portion recited in claim 1. Clarification is necessary.

For claim 15, lines 5-6, see the response above to claim 2, lines 5-6.

For claim 16, line 3, see the responses above to claim 3.

In claim 20, line 3, Applicants refer to "a control portion" and it is unclear whether this control portion is the same as the control portion recited in claim 6. Clarification is necessary.

In claims 21-24, Applicants recite process limitations as to how the flow rate is manipulated in the apparatus. These claims would recite structural limitations provided that Applicants recited the structure to effect the claimed steps, for examples, see claims 2 or 4.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over ASPA (Admitted State of the Prior Art) in view of Miyakawa et al (US 6,473,995) for reasons set forth in the previous office action.

With respect to claim 1, Applicants should note controller or control portion (9 and col. 3, lines 46-48.

With respect to claim 2, the combined teachings of the ASPA and Miyakawa et al do not explicitly teach or suggest the controller setting the second exhaust flow rate greater or larger than the first exhaust flow rate. However, in light of the objective of Miyakawa et al to dry the coated substrate is a quicker period of time (see col. 1, lines 46-51), it would have been obvious to one of ordinary skill in the art, to determine via routine experimentation, the appropriate exhaust flow rate in the first and second evacuation steps so as to minimize the time necessary to dry the coated substrate.

With respect to claims 3 and 4, even though the ASPA is silent concerning timing of the vacuum process, Miyakawa et al recognize the timing (i.e., t1 to t3) of the vacuum drying process (via means not shown) as a means for measuring progress in the drying of a given coated

substrate as evidenced by all the examples. It would have been obvious to one of ordinary skill in the art to provide timing of the drying process as a way of measuring progress of drying of various coated substrates.

With respect to claims 21-24, these claims have been given no patentable weight as these claims recite process limitations as to how the flow rate is set and/or varied, however, no structural limitations have been set forth.

With respect to claim 25, the ASPA as shown in Fig. 10, provides for a vane spaced a distance from the substrate so vapors flow outward through a gap formed between the surface of the substrate and the vane.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takamori et al (US 6,261,007) in view of the ASPA (Admitted State of the Prior Art) for reasons set forth in the previous office action.

Allowable Subject Matter

Claims 6-8 and 19 are allowable.

Claims 10, 15-18, and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 19 would be allowable because there is no teaching or suggestion in the prior art of a coating film forming apparatus comprising the combination of a cassette mount portion, a coating unit, a drying apparatus, and means for taking means for taking out the substrate from the

cassette mounted on said cassette mount portion, carrying the substrate into said coating unit, and carrying the substrate having the coating liquid applied to the apparatus for drying under reduced pressure wherein the drying apparatus comprises an airtight container in which a substrate mount portion for mounting the substrate is provided to place the substrate in the pressure reduced atmosphere, a straightening vane provided to face the surface of the mounted substrate with a gap interposed having a size the same or larger than the area of the substrate, means for evacuating and reducing the pressure in the container, an exhaust flow rate regulating portion for regulating a flow rate of exhaust for pressure reduction, and a control portion outputting a flow rate set value for the exhaust flow rate regulating portion, and varying the flow rate set value at least in two steps while the solvent is actively evaporating from the coating liquid wherein the control portion stores data corresponding to a pattern of the flow rate set value while the solvent is actively evaporating from the coating liquid for each type of the coating liquid.

Response to Arguments

Applicants' arguments filed 12/7/04 have been fully considered but they are not persuasive.

Applicants contend that Miyakawa fails to control the flow rate set value in two steps while solvent is actively evaporated from the coating liquid. This argument is not deemed persuasive because Miyakawa provides for a process controller as evidenced by col. 3, lines 46-48) and the controller enables automatic evacuation of the vacuum chamber as well as varying or adjusting the flow rate of solvent actively evaporating from the coated substrate as evidenced by col. 5, lines 53 to col. 6, lines 1-5. In the first step, the exhaust rate is higher than that of the

evaporation rate of the solvent in the coating liquid on the substrate and in the second step, the exhaust rate is slowed down.

Applicants contend that Miyakawa teaches an apparatus that evaporates the solvent at constant vacuum and Miyakawa does not provide of a control portion that varies the flow rate set value at least in two steps. This argument is not deemed persuasive for reasons mentioned above. In addition, Miyakawa discusses in the description of the graph of Fig. 5 that the vacuum chamber is exhausted at a high or fast rate (see col. 6, line 16-18) and then the chamber is exhausted at a slow rate (see col. 6, lines 23-24).

Applicants contend that Miyakawa fails to teach or suggest the use of a straightening vane. This argument is deemed moot because the ASPA already establishes the use of a straightening vane in the evacuation chamber when drying a coated substrate is well known (see instant specification on page 2, second paragraph).

Applicants contend that neither ASPA nor Miyakawa teaches switching the flow rate from a first flow rate to a second flow rate wherein the second flow rate is larger than the first flow rate. This argument is not deemed persuasive because even though combined teachings of the ASPA and Miyakawa et al do not explicitly teach or suggest the controller setting the second exhaust flow rate greater or larger than the first exhaust flow rate, it would have been within the purview of one skilled in the art to determined, via routine experimentation, the appropriate exhaust flow rate in the first and second evacuation steps so as to minimize time necessary to dry the coated substrate and thereby lower manufacturing costs.

Applicants contend that Takamori fails to teach or suggest a control portion that varies the flow rate set value at least in two steps while the solvent is actively evaporating from the

coating liquid. This argument is not deemed persuasive because Takamori provides for an atmosphere controller as evidenced by claims 1 and 4 that provides for control of all portions of the apparatus including the drying portion. Takamori recognizes rapid drying of a coated substrate in first and second drying steps (see col. 11, lines 1-25) and provide a drying unit capable of drying the substrate at two different exhaust flow rates. Furthermore, in recognition of the objective of Takamori to accelerate drying of the coated substrate, it would have been within the purview of one skilled in the art to determined, via routine experimentation, the appropriate exhaust flow rate in the first and second evacuation steps so as to minimize time necessary to dry the coated substrate and thereby lower manufacturing costs.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura Edwards
Primary Examiner
Art Unit 1734

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March 4, 2005